



**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
401 CHURCH STREET
L & C ANNEX 6TH FLOOR
NASHVILLE TN 37243**

December 2, 2012

Mr. Curtis Dobbs
General Manager
e-copy: curtis.dobbs@airliquide.com
Air Liquide Industrial U.S. LP
5808 Old Millington Road
Millington, TN 38053

Subject: **NPDES Permit No. TN0000965
Air Liquide Industrial U.S. LP - Millington
Millington, Shelby County, Tennessee**

Dear Mr. Dobbs:

In accordance with the provisions of the Tennessee Water Quality Control Act, Tennessee Code Annotated (T.C.A.), Sections 69-3-101 through 69-3-120, the Division of Water Resources hereby issues the enclosed NPDES Permit. The continuance and/or reissuance of this NPDES Permit is contingent upon your meeting the conditions and requirements as stated therein.

Please be advised that a petition for permit appeal may be filed, pursuant to T.C.A. Section 69-3-105, subsection (i), by the permit applicant or by any aggrieved person who participated in the public comment period or gave testimony at a formal public hearing whose appeal is based upon any of the issues that were provided to the commissioner in writing during the public comment period or in testimony at a formal public hearing on the permit application. Additionally, for those permits for which the department gives public notice of a draft permit, any permit applicant or aggrieved person may base a permit appeal on any material change to conditions in the final permit from those in the draft, unless the material change has been subject to additional opportunity for public comment. Any petition for permit appeal under this subsection (i) shall be filed with the technical secretary of the Water Resources Board within thirty (30) days after public notice of the commissioner's decision to issue or deny the permit. A copy of the filing should also be sent to TDEC's Office of General Counsel.

If you have questions, please contact the Memphis Environmental Field Office at 1-888-891-TDEC; or, at this office, please contact Ms. Souraya Fathi at (615) 532-0485 or by E-mail at Souraya.Fathi@tn.gov.

Sincerely,

Vojin Janjić
Manager, Permit Section

Enclosure

cc: Permit Section File
Memphis Environmental Field Office (Maylynne.Wilbert@tn.gov)
Mr. Damian Vickerman, Environmental Representative, Air Liquide Industrial U.S. LP, Damian.VICKERMAN@airliquide.com



No. TN0000965

Authorization to discharge under the
National Pollutant Discharge Elimination System (NPDES)

Issued By

**Tennessee Department of Environment and Conservation
Division of Water Resources
401 Church Street
6th Floor, L & C Annex
Nashville, Tennessee 37243-1534**

Under authority of the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.) and the delegation of authority from the United States Environmental Protection Agency under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (33 U.S.C. 1251, et seq.)

Discharger: **Air Liquide Industrial U.S. LP - Millington**
is authorized to discharge: **non-contact cooling water from Outfall 001**
from a facility located: **in Millington, Shelby County, Tennessee**
to receiving waters named: **mile 1.9 of a wet weather conveyance to mile 11.7 of the
Loosahatchie River**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on: **January 1, 2013**

This permit shall expire on: **November 30, 2017**

Issuance date: **December 1, 2012**

A handwritten signature in blue ink, appearing to read "S. Dudley", is written over a horizontal line.

for Sandra K. Dudley, Ph.D., P.E.
Director

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TABLE OF CONTENTS

PART I	1
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	1
B. MONITORING PROCEDURES	2
1. <i>Representative Sampling</i>	2
2. <i>Sampling Frequency</i>	2
3. <i>Test Procedures</i>	2
4. <i>Recording of Results</i>	2
5. <i>Records Retention</i>	3
C. DEFINITIONS	3
D. ACRONYMS AND ABBREVIATIONS	3
E. REPORTING	5
1. <i>Monitoring Results</i>	5
2. <i>Additional Monitoring by Permittee</i>	5
3. <i>Falsifying Results and/or Reports</i>	6
4. <i>Outlier Data</i>	6
F. SCHEDULE OF COMPLIANCE	6
PART II	6
A. GENERAL PROVISIONS	6
1. <i>Duty to Reapply</i>	6
2. <i>Right of Entry</i>	7
3. <i>Availability of Reports</i>	7
4. <i>Proper Operation and Maintenance</i>	7
5. <i>Treatment Facility Failure</i>	7
6. <i>Property Rights</i>	7
7. <i>Severability</i>	8
8. <i>Other Information</i>	8
B. CHANGES AFFECTING THE PERMIT	8
1. <i>Planned Changes</i>	8
2. <i>Permit Modification, Revocation, or Termination</i>	8
3. <i>Change of Ownership</i>	9
4. <i>Change of Mailing Address</i>	9
C. NONCOMPLIANCE	10
1. <i>Effect of Noncompliance</i>	10
2. <i>Reporting of Noncompliance</i>	10
3. <i>Sanitary Sewer Overflow</i>	10
4. <i>Upset</i>	11
5. <i>Adverse Impact</i>	12
6. <i>Bypass</i>	12
7. <i>Washout</i>	12
D. LIABILITIES	13
1. <i>Civil and Criminal Liability</i>	13
2. <i>Liability Under State Law</i>	13
PART III	13
A. TOXIC POLLUTANTS	13
B. REOPENER CLAUSE	14
C. PLACEMENT OF SIGNS	14
D. ANTIDegradation	15

RATIONALE	1
I. DISCHARGER.....	1
II. PERMIT STATUS	1
III. FACILITY DISCHARGES AND RECEIVING WATERS	2
IV. APPLICABLE EFFLUENT LIMITATIONS GUIDELINES.....	2
V. PREVIOUS PERMIT LIMITS AND MONITORING REQUIREMENTS	2
VI. HISTORICAL MONITORING AND INSPECTION	2
VII. NEW PERMIT LIMITS AND MONITORING REQUIREMENTS	2
VIII. METALS AND TOXICS	3
IX. ANTIDegradation	4
X. PERMIT DURATION	5
APPENDIX 1	6
FACILITY DISCHARGES AND RECEIVING WATERS	6
APPENDIX 2	7
PREVIOUS PERMIT LIMITS AND MONITORING REQUIREMENTS	7
APPENDIX 3	8
HISTORICAL MONITORING AND INSPECTION	8
APPENDIX 4	9
NEW PERMIT LIMITS.....	9

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Air Liquide Industrial U.S. LP - Millington is authorized to discharge non-contact cooling water from Outfall 001 to mile 1.9 of a wet weather conveyance to mile 11.7 of the Loosahatchie River.

These discharges shall be limited and monitored by the permittee as specified below:

Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : All Year

Parameter	Qualifier	Value	Unit	Sample Type	Frequency	Statistical Base
Flow	Report	-	Mgal/d	Recorder	Continuous	Daily Maximum
Flow	Report	-	Mgal/d	Recorder	Continuous	Monthly Average
Oil & Grease	<=	10	mg/L	Grab	Quarterly	Daily Maximum
Phosphorus, total (as P)	Report	-	mg/L	Composite	Quarterly	Daily Maximum
Phosphorus, total (as P)	Report	-	lb/d	Composite	Quarterly	Daily Maximum
Temperature, water deg. C	Report	-	deg C	Grab	Quarterly	Daily Maximum
pH	>=	6.0	SU	Grab	Quarterly	Minimum
pH	<=	9.0	SU	Grab	Quarterly	Maximum

<p>* Flow shall be reported in Million Gallons per Day (MGD). ** pH analyses shall be performed within fifteen (15) minutes of sample collection. *** permit will contain language prohibiting visible floating scum, oil or other matter in the wastewater discharge.</p>
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Additional monitoring requirements and conditions applicable to Outfall 001 include:

There shall be no distinctly visible floating solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life.

The wastewater discharge shall not contain pollutants in quantities that will be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream.

Sludge or any other material removed by any treatment works must be disposed of in a manner, which prevents its entrance into or pollution of any surface or subsurface waters. Additionally, the disposal of such sludge or other material must be in compliance with the Tennessee Solid Waste Disposal Act, TCA 68-31-101 et seq. and the Tennessee Hazardous Waste Management Act, TCA 68-46-101 et seq.

B. MONITORING PROCEDURES

1. Representative Sampling

Samples and measurements taken in compliance with the monitoring requirements specified herein shall be representative of the volume and nature of the monitored discharge, and shall be taken after treatment and prior to mixing with uncontaminated storm water runoff or the receiving stream.

2. Sampling Frequency

The permittee should mark the 'No Discharge' box on the Discharge Monitoring Report form only if a permitted outfall does not discharge at any time during the monitoring period. If the outfall discharges effluent at any time during the monitoring period, the permittee must provide at least one sampling result from the effluent of that outfall.

3. Test Procedures

- a. Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304 (h) of the Clean Water Act (the "Act"), as amended, under which such procedures may be required.
- b. Unless otherwise noted in the permit, all pollutant parameters shall be determined according to methods prescribed in Title 40, CFR Part 136, as amended, promulgated pursuant to Section 304 (h) of the Act.

In instances where permit limits established through implementation of applicable water criteria are below analytical capabilities, compliance with those limits will be determined using the detection limits described in the TN Rules, Chapter 1200-4-3-.05(8).

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The exact place, date and time of sampling;
- b. The exact person(s) collecting samples;
- c. The dates and times the analyses were performed;
- d. The person(s) or laboratory who performed the analyses;
- e. The analytical techniques or methods used, and;
- f. The results of all required analyses.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation shall be retained for a minimum of three (3) years, or longer, if requested by the Division of Water Resources.

C. DEFINITIONS

For the purpose of this permit, a **calendar day** is defined as the 24-hour period from midnight to midnight or any other 24-hour period that reasonably approximates the midnight to midnight time period.

Continuous monitoring, for the purposes of this permit, is the measurement of flow, total dissolved solids, and turbidity at a frequency that will accurately characterize the nature of discharges from the site and water in the receiving stream. Samples collected continuously shall be at a frequency of not less than once every fifteen minutes for flow, and not less than once per hour for turbidity and total dissolved solids.

The **Daily Maximum Concentration** is a limitation on the average concentration, in milligrams per liter (mg/L), of the discharge during any calendar day. When a proportional-to-flow composite sampling device is used, the daily concentration is the concentration of that 24-hour composite; when other sampling means are used, the daily concentration is the arithmetic mean of the concentrations of equal volume samples collected during any calendar day or sampling period.

Discharge or “discharge of a pollutant” refers to the addition of pollutants to waters from a source.

The **Instantaneous Concentration** is a limitation on the concentration, in milligrams per liter (mg/L), of any pollutant contained in the discharge determined from a grab sample taken at any point in time.

A **Qualifying Storm Event** is one which is greater than 0.1 inches and that occurs after a period of at least 72 hours after any previous storm event with rainfall of 0.1 inches or greater.

For the purpose of this permit, a **Quarter** is defined as any one of the following three month periods: January 1 through March 31, April 1 through June 30, July 1 through September 30, or October 1 through December 31.

D. ACRONYMS AND ABBREVIATIONS

1Q10 – 1-day minimum, 10-year recurrence interval
30Q20 – 30-day minimum, 20-year recurrence interval
7Q10 – 7-day minimum, 10-year recurrence interval
BAT – best available technology economically achievable
BCT – best conventional pollutant control technology
BDL – below detection level

BOD₅ – five day biochemical oxygen demand
BPT – best practicable control technology currently available
CBOD₅ – five day carbonaceous biochemical oxygen demand
CEI – compliance evaluation inspection
CFR – code of federal regulations
CFS – cubic feet per second
CFU – colony forming units
CIU – categorical industrial user
CSO – combined sewer overflow
DMR – discharge monitoring report
D.O. – dissolved oxygen
E. coli – *Escherichia coli*
EFO – environmental field office
LB(lb) - pound
IC₂₅ – inhibition concentration causing 25% reduction in survival, reproduction and growth of the test organisms
IU – industrial user
IWS – industrial waste survey
LC₅₀ – acute test causing 50% lethality
MDL – method detection level
MGD – million gallons per day
MG/L(mg/l) – milligrams per liter
ML – minimum level of quantification
ml – milliliter
MLSS – mixed liquor suspended solids
MOR – monthly operating report
NODI – no discharge
NOEC – no observed effect concentration
NPDES – national pollutant discharge elimination system
PL – permit limit
POTW – publicly owned treatment works
RDL – required detection limit
SAR – semi-annual [pretreatment program] report
SIU – significant industrial user
SSO – sanitary sewer overflow
STP – sewage treatment plant
TCA – Tennessee code annotated
TDEC – Tennessee Department of Environment and Conservation
TIE/TRE – toxicity identification evaluation/toxicity reduction evaluation
TMDL – total maximum daily load
TRC – total residual chlorine
TSS – total suspended solids
WQBEL – water quality based effluent limit

E. REPORTING

1. Monitoring Results

Monitoring results shall be recorded monthly and submitted monthly using Discharge Monitoring Report (DMR) forms supplied by the Division of Water Resources. Submittals shall be postmarked no later than 15 days after the completion of the reporting period. A completed DMR with an original signature shall be submitted to the following address:

**TENNESSEE DEPT. OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER RESOURCES
ENFORCEMENT & COMPLIANCE SECTION
L & C ANNEX 6TH FLOOR
401 CHURCH STREET
NASHVILLE TN 37243**

A copy of the completed and signed DMR shall be mailed to the Memphis Environmental Field Office (EFO) at the following address:

**TENNESSEE DEPT. OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER RESOURCES
MEMPHIS ENVIRONMENTAL FIELD OFFICE
8383 WOLF LAKE DRIVE
BARTLETT TN 38133**

A copy should be retained for the permittee's files. In addition, any communication regarding compliance with the conditions of this permit must be sent to the two offices listed above.

The first DMR is due on the 15th of the month following permit effectiveness.

DMRs and any other information or report must be signed and certified by a responsible corporate officer as defined in 40 CFR 122.22, a general partner or proprietor, or a principal municipal executive officer or ranking elected official, or his duly authorized representative. Such authorization must be submitted in writing and must explain the duties and responsibilities of the authorized representative.

The electronic submission of DMR data will be accepted only if formally approved beforehand by the division. For purposes of determining compliance with this permit, data approved by the division to be submitted electronically is legally equivalent to data submitted on signed and certified DMR forms.

2. Additional Monitoring by Permittee

If the permittee monitors any pollutant specifically limited by this permit more frequently than required at the location(s) designated, using approved analytical methods as specified herein, the results of such monitoring shall be included in the calculation and reporting of the values required in the DMR form. Such increased frequency shall also be indicated on the form.

3. Falsifying Results and/or Reports

Knowingly making any false statement on any report required by this permit or falsifying any result may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Water Pollution Control Act, as amended, and in Section 69-3-115 of the Tennessee Water Quality Control Act.

4. Outlier Data

Outlier data include analytical results that are probably false. The validity of results is based on operational knowledge and a properly implemented quality assurance program. False results may include laboratory artifacts, potential sample tampering, broken or suspect sample containers, sample contamination or similar demonstrated quality control flaw.

Outlier data are identified through a properly implemented quality assurance program, and according to ASTM standards (e.g. Grubbs Test, 'h' and 'k' statistics). Furthermore, outliers should be verified, corrected, or removed, based on further inquiries into the matter. If an outlier was verified (through repeated testing and/or analysis), it should remain in the preliminary data set. If an outlier resulted from a transcription or similar clerical error, it should be corrected and subsequently reported.

Therefore, only if an outlier was associated with problems in the collection or analysis of the samples and as such does not conform with the Guidelines Establishing Test Procedures for the Analysis of Pollutants (40 CFR §136), it can be removed from the data set and not reported on the Discharge Monitoring Report forms (DMRs). Otherwise, all results (including monitoring of pollutants more frequently than required at the location(s) designated, using approved analytical methods as specified in the permit) should be included in the calculation and reporting of the values required in the DMR form. You are encouraged to use "comment" section of the DMR form (or attach additional pages), in order to explain any potential outliers or dubious results.

F. SCHEDULE OF COMPLIANCE

Full compliance and operational levels shall be attained from the effective date of this permit.

PART II

A. GENERAL PROVISIONS

1. Duty to Reapply

Permittee is not authorized to discharge after the expiration date of this permit. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information and forms as are required to the Director of Water Pollution Control (the "Director") no later than 180 days prior to the expiration date. Such applications must be properly signed and certified.

2. Right of Entry

The permittee shall allow the Director, the Regional Administrator of the U.S. Environmental Protection Agency, or their authorized representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises where an effluent source is located or where records are required to be kept under the terms and conditions of this permit, and at reasonable times to copy these records;
- b. To inspect at reasonable times any monitoring equipment or method or any collection, treatment, pollution management, or discharge facilities required under this permit; and
- c. To sample at reasonable times any discharge of pollutants.

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Water Pollution Control Act, as amended, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division of Water Resources. As required by the Federal Act, effluent data shall not be considered confidential.

4. Proper Operation and Maintenance

- a. The permittee shall at all times properly operate and maintain all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory and process controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit. Backup continuous pH and flow monitoring equipment are not required.
- b. Dilution water shall not be added to comply with effluent requirements to achieve BCT, BPT, BAT and or other technology-based effluent limitations such as those in State of Tennessee Rule 1200-4-5-.09.

5. Treatment Facility Failure

The permittee, in order to maintain compliance with this permit, shall control production, all discharges, or both, upon reduction, loss, or failure of the treatment facility, until the facility is restored or an alternative method of treatment is provided. This requirement applies in such situations as the reduction, loss, or failure of the primary source of power.

6. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private

property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

7. Severability

The provisions of this permit are severable. If any provision of this permit due to any circumstance, is held invalid, then the application of such provision to other circumstances and to the remainder of this permit shall not be affected thereby.

8. Other Information

If the permittee becomes aware that he failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, then he shall promptly submit such facts or information.

B. CHANGES AFFECTING THE PERMIT

1. Planned Changes

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
- b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1).

2. Permit Modification, Revocation, or Termination

- a. This permit may be modified, revoked and reissued, or terminated for cause as described in 40 CFR 122.62 and 122.64, Federal Register, Volume 49, No. 188 (Wednesday, September 26, 1984), as amended.
- b. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.
- c. If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established for any toxic pollutant under Section 307(a) of the Federal Water Pollution Control Act, as amended, the Director shall modify or revoke and reissue the permit to conform to the prohibition or to the effluent standard, providing that the effluent standard is more stringent than the limitation in the permit on the toxic pollutant. The permittee shall comply with these effluent standards or prohibitions within

the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified or revoked and reissued to incorporate the requirement.

- d. The filing of a request by the permittee for a modification, revocation, reissuance, termination, or notification of planned changes or anticipated noncompliance does not halt any permit condition.

3. Change of Ownership

This permit may be transferred to another party (provided there are neither modifications to the facility or its operations, nor any other changes which might affect the permit limits and conditions contained in the permit) by the permittee if:

- a. The permittee notifies the Director of the proposed transfer at least 30 days in advance of the proposed transfer date;
- b. The notice includes a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage, and liability between them; and
- c. The Director, within 30 days, does not notify the current permittee and the new permittee of his intent to modify, revoke or reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

Pursuant to the requirements of 40 CFR 122.61, concerning transfer of ownership, the permittee must provide the following information to the division in their formal notice of intent to transfer ownership: 1) the NPDES permit number of the subject permit; 2) the effective date of the proposed transfer; 3) the name and address of the transferor; 4) the name and address of the transferee; 5) the names of the responsible parties for both the transferor and transferee; 6) a statement that the transferee assumes responsibility for the subject NPDES permit; 7) a statement that the transferor relinquishes responsibility for the subject NPDES permit; 8) the signatures of the responsible parties for both the transferor and transferee pursuant to the requirements of 40 CFR 122.22(a), "Signatories to permit applications"; and, 9) a statement regarding any proposed modifications to the facility, its operations, or any other changes which might affect the permit limits and conditions contained in the permit.

4. Change of Mailing Address

The permittee shall promptly provide to the Director written notice of any change of mailing address. In the absence of such notice the original address of the permittee will be assumed to be correct.

C. NONCOMPLIANCE

1. Effect of Noncompliance

All discharges shall be consistent with the terms and conditions of this permit. Any permit noncompliance constitutes a violation of applicable State and Federal laws and is grounds for enforcement action, permit termination, permit modification, or denial of permit reissuance.

2. Reporting of Noncompliance

a. 24-Hour Reporting

In the case of any noncompliance which could cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the required notice of non-compliance shall be provided to the Division of Water Resources in the appropriate regional Field Office within 24-hours from the time the permittee becomes aware of the circumstances. (The regional Field Office should be contacted for names and phone numbers of environmental response personnel).

A written submission must be provided within five calendar days of the time the permittee becomes aware of the circumstances, unless this requirement is waived by the Director on a case-by-case basis. The permittee shall provide the Director with the following information:

- i. A description of the discharge and cause of noncompliance;
- ii. The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and
- iii. The steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

b. Scheduled Reporting

For instances of noncompliance which are not reported under subparagraph 2.a. above, the permittee shall report the noncompliance on the Discharge Monitoring Report. The report shall contain all information concerning the steps taken, or planned, to reduce, eliminate, and prevent recurrence of the violation and the anticipated time the violation is expected to continue.

3. Sanitary Sewer Overflow

- a. "**Sanitary Sewer Overflow**" means the discharge to land or water of wastes from any portion of the collection, transmission, or treatment system other than through permitted outfalls.
- b. Sanitary Sewer Overflows are prohibited.

- c. The permittee shall operate the collection system so as to avoid sanitary sewer overflows. No new or additional flows shall be added upstream of any point in the collection system, which experiences chronic sanitary sewer overflows (greater than 5 events per year) or would otherwise overload any portion of the system.
- d. Unless there is specific enforcement action to the contrary, the permittee is relieved of this requirement after: 1) an authorized representative of the Commissioner of the Department of Environment and Conservation has approved an engineering report and construction plans and specifications prepared in accordance with accepted engineering practices for correction of the problem; 2) the correction work is underway; and 3) the cumulative, peak-design, flows potentially added from new connections and line extensions upstream of any chronic overflow point are less than or proportional to the amount of inflow and infiltration removal documented upstream of that point. The inflow and infiltration reduction must be measured by the permittee using practices that are customary in the environmental engineering field and reported in an attachment to a Monthly Operating Report submitted to the regional TDEC Field Office. The data measurement period shall be sufficient to account for seasonal rainfall patterns and seasonal groundwater table elevations.
- e. In the event that more than five (5) sanitary sewer overflows have occurred from a single point in the collection system for reasons that may not warrant the self-imposed moratorium or completion of the actions identified in this paragraph, the permittee may request a meeting with the Division of Water Resources field office staff to petition for a waiver based on mitigating evidence.

4. Upset

- a. "**Upset**" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the permittee demonstrates, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - ii. The permitted facility was at the time being operated in a prudent and workman-like manner and in compliance with proper operation and maintenance procedures;
 - iii. The permittee submitted information required under "Reporting of Noncompliance" within 24-hours of becoming aware of the upset (if this information is provided orally, a written submission must be provided within five days); and

- iv. The permittee complied with any remedial measures required under "Adverse Impact."

5. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

6. Bypass

- a. "**Bypass**" is the intentional diversion of wastewater away from any portion of a treatment facility. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- b. Bypasses are prohibited unless the following 3 conditions are met:
 - i. The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;
 - ii. There are not feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down-time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass, which occurred during normal periods of equipment down-time or preventative maintenance;
 - iii. The permittee submits notice of an unanticipated bypass to the Division of Water Resources in the appropriate environmental assistance center within 24-hours of becoming aware of the bypass (if this information is provided orally, a written submission must be provided within five days). When the need for the bypass is foreseeable, prior notification shall be submitted to the Director, if possible, at least 10 days before the date of the bypass.
- c. Bypasses not exceeding limitations are allowed **only** if the bypass is necessary for essential maintenance to assure efficient operation. All other bypasses are prohibited. Allowable bypasses not exceeding limitations are not subject to the reporting requirements of 6.b.iii, above.

7. Washout

- a. For domestic wastewater plants only, a "washout" shall be defined as loss of Mixed Liquor Suspended Solids (MLSS) of 30.00% or more. This refers to the

MLSS in the aeration basin(s) only. This does not include MLSS decrease due to solids wasting to the sludge disposal system. A washout can be caused by improper operation or from peak flows due to infiltration and inflow.

- b. A washout is prohibited. If a washout occurs the permittee must report the incident to the Division of Water Resources in the appropriate regional Field Office within 24-hours by telephone. A written submission must be provided within 5 days. The washout must be noted on the discharge monitoring report. Each day of a washout is a separate violation.

D. LIABILITIES

1. Civil and Criminal Liability

Except as provided in permit conditions for "**Bypassing**," "**Overflow**," and "**Upset**," nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of wastewater to any surface or subsurface waters. Additionally, notwithstanding this Permit, it shall be the responsibility of the permittee to conduct its wastewater treatment and/or discharge activities in a manner such that public or private nuisances or health hazards will not be created.

2. Liability Under State Law

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or the Federal Water Pollution Control Act, as amended.

PART III

OTHER REQUIREMENTS

A. TOXIC POLLUTANTS

The permittee shall notify the Division of Water Resources as soon as it knows or has reason to believe:

1. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis, of any toxic substance(s) (listed at 40 CFR 122, Appendix D, Table II and III) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - a. One hundred micrograms per liter (100 ug/l);

- b. Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - c. Five (5) times the maximum concentration value reported for that pollutant(s) in the permit application in accordance with 122.21(g)(7); or
 - d. The level established by the Director in accordance with 122.44(f).
2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- a. Five hundred micrograms per liter (500 ug/l);
 - b. One milligram per liter (1 mg/L) for antimony;
 - c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 122.21(g)(7); or
 - d. The level established by the Director in accordance with 122.44(f).

B. REOPENER CLAUSE

If an applicable standard or limitation is promulgated under Sections 301(b)(2)(C) and (D), 304(B)(2), and 307(a)(2) and that effluent standard or limitation is more stringent than any effluent limitation in the permit or controls a pollutant not limited in the permit, the permit shall be promptly modified or revoked and reissued to conform to that effluent standard or limitation.

C. PLACEMENT OF SIGNS

Within sixty (60) days of the effective date of this permit, the permittee shall place and maintain a sign(s) at each outfall and any bypass/overflow point in the collection system. For the purposes of this requirement, any bypass/overflow point that has discharged five (5) or more times in the last year must be so posted. The sign(s) should be clearly visible to the public from the bank and the receiving stream or from the nearest public property/right-of-way, if applicable. The minimum sign size should be two feet by two feet (2' x 2') with one inch (1") letters. The sign should be made of durable material and have a white background with black letters.

The sign(s) are to provide notice to the public as to the nature of the discharge and, in the case of the permitted outfalls, that the discharge is regulated by the Tennessee Department of Environment and Conservation, Division of Water Resources. The following is given as an example of the minimal amount of information that must be included on the sign:

TREATED INDUSTRIAL WASTEWATER
Air Liquide Industrial U.S. LP - Millington
(Permittee's Phone Number)
NPDES Permit NO. TN0000965
TENNESSEE DIVISION OF WATER RESOURCES
1-888-891-8332 ENVIRONMENTAL FIELD OFFICE - Memphis

INDUSTRIAL STORM WATER RUNOFF
Air Liquide Industrial U.S. LP - Millington
(Permittee's Phone Number)
NPDES Permit NO. TN0000965
TENNESSEE DIVISION OF WATER RESOURCES
1-888-891-8332 ENVIRONMENTAL FIELD OFFICE - Memphis

D. ANTIDEGRADATION

Pursuant to the Rules of the Tennessee Department of Environment and Conservation, Chapter 1200-4-3-.06, titled "Tennessee Antidegradation Statement," which prohibits the degradation of high quality surface waters and the increased discharges of substances that cause or contribute to impairment, the permittee shall further be required, pursuant to the terms and conditions of this permit, to comply with the effluent limitations and schedules of compliance required to implement applicable water quality standards, to comply with a State Water Quality Plan or other state or federal laws or regulations, or where practicable, to comply with a standard permitting no discharge of pollutants.

RATIONALE

Air Liquide Industrial U.S. LP - Millington

NPDES PERMIT NO. TN0000965
Millington, Shelby County, Tennessee

Permit Writer: Ms. Souraya Fathi

I. DISCHARGER

Air Liquide Industrial U.S. LP - Millington
5808 Old Millington Road
Millington, Shelby County, Tennessee
Site Longitude: -89.963889 Site Latitude: 35.284722

Official Contact Person:
Mr. Curtis Dobbs
General Manager
(901) 357-7333

Nature of Business:
Carbon dioxide liquid is depressurized to form dry ice
or solid carbon dioxide.

SIC Code(s): 2813
Industrial Classification: Primary
Discharger Rating: Minor

PRIMARY INDUSTRY CATEGORY means any industry category listed in the
NRDC Settlement Agreement (Natural Resources Defense Council v. Train, 8
ERC 2120 [D.D.C. 1976], modified 12 ERC 1833 [D.D.C. 1979]).

II. PERMIT STATUS

Issued April 30, 2011
Expired December 31, 2012
Application for renewal received July 27, 2012

Watershed Scheduling

Environmental Field Office: Memphis
Primary Outfall Longitude: -89.963889 Primary Outfall Latitude: 35.284722
Hydrocode: 8010209 Watershed Group: 2
Watershed Identification: Loosahatchie
Target Reissuance Year: 2012

III. FACILITY DISCHARGES AND RECEIVING WATERS

Air Liquide Industrial U.S. LP - Millington discharges non-contact cooling water from Outfall 001 to mile 1.9 of a wet weather conveyance to mile 11.7 of the Loosahatchie River. Appendix 1 summarizes facility discharges and the receiving stream information for Outfall 001.

Storm water discharges associated with the industrial activity of this facility are covered by the Tennessee Multi-Sector General Storm Water Permit TNR050988. Storm water concerns associated with this facility are covered in this general permit and will, therefore, not be addressed in the new permit.

IV. APPLICABLE EFFLUENT LIMITATIONS GUIDELINES

The Standard Industrial Classification (SIC) code for Air Liquide Industrial U.S. LP - Millington is 2813 (Industrial Gases). Process wastewater discharged through Outfall 001 is regulated by 40 CFR Part AF - (Carbon Dioxide Production Subcategory). This subpart has been, however, has been reserved and Effluent Limited Guidelines have not been promulgated for this group. Standards of performance for these discharges are therefore established in accordance with existing state regulations using available treatability information

V. PREVIOUS PERMIT LIMITS AND MONITORING REQUIREMENTS

Appendix 2 lists the permit limitations and monitoring requirements as defined in the previous permit.

VI. HISTORICAL MONITORING AND INSPECTION

During the previous permit term, Air Liquide Industrial U.S. LP - Millington did not have any appreciable difficulty in meeting effluent limitations as outlined in the previous permit. A summary of the data reported on Discharge Monitoring Report forms during the previous permit term is summarized in Appendix 3.

VII. NEW PERMIT LIMITS AND MONITORING REQUIREMENTS

The proposed new permit limits have been selected by using Best Professional Judgment (BPJ) through a comparison of any applicable EPA effluent guidelines or State of Tennessee maximum limits per Rule 1200-4-5-.08 with the previous permit limits, the requirements from the Tennessee Storm Water Multi-Sector General Permit for Industrial Activities (TMSP), the data submitted on DMR forms, the data contained in the NPDES application form 2C submitted by the facility and operational and/or treatability data. The more restrictive requirement from this comparison is checked against the appropriate water quality criteria. The most restrictive limit is used as the new permit limit. Furthermore, effluent limitations in this permit must comply with any approved Total Maximum Daily Load (TMDL) studies. Additionally, total phosphorous monthly effluent monitoring have been added to this permit (See section VIII). Appendix 4 lists all proposed effluent limitations and monitoring requirements to be included in the new permit. Note that in general, the term "anti-backsliding" refers to a statutory provision that prohibits the renewal, reissuance, or modification of an

existing NPDES permit that contains effluents limits, permit conditions, or standards that are less stringent than those established in the previous permit.

VIII. METALS AND TOXICS

Flow

Monitoring of flow quantifies the load of pollutants to the stream. Flow shall be reported in Million Gallons per Day (MGD) and monitored at the time of sample collection.

Oil and Grease

The division has determined that an oil and grease limitation is needed for this facility because of the potential of contamination from spills, leaks and other industrial activities present at the site. The technology-based limit for oil and grease is 10 mg/l as a daily maximum concentration. This level can be accomplished where oil/water separators are maintained, kept clean and are not overloaded. There should be less reliance upon the oil/water separator as a solution and a greater reliance upon good management, operation and housekeeping practices to restrict pollution.

According to the State of Tennessee Water Quality Standards for the protection of Fish & Aquatic Life [Chapter 1200-4-3-.03(3) (c)], there shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life in the receiving stream.

The permit writer is selecting technology-based limits for oil and grease of 10 mg/L as a daily maximum concentration. In addition, the permit will contain language prohibiting visible floating scum, oil or other matter in the wastewater discharge. Sample type will be grab.

pH

According to the State of Tennessee Water Quality Standards [Chapter 1200-4-3-.03(3) (b)], the pH for the protection of Fish and Aquatic Life shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24-hours. Considering that the receiving stream will provide some buffering capacity, effluent limitation for pH will be retained in a range 6.0 to 9.0. The sample type will be grab.

Effluent Temperature

Temperature will be limited according to the State of Tennessee Water Quality Standards for the protection of Fish & Aquatic Life [Chapter 1200-4-3-.03(3)(e)]. It is recognized that the temperature of the cooling water discharge will be greater than the temperature of the water prior to its use for cooling or other purposes. This discharge must not cause the temperature change in receiving stream to exceed 3°C relative to an upstream control point. Also, this discharge must not cause the temperature of receiving stream to exceed 30.5°C (except as a result of natural causes), and this discharge must not cause the maximum rate of temperature change in receiving stream to exceed 2°C per hour (except as a result of natural causes).

Considering that Outfall 001 discharges to a receiving stream with a large critical low flow proportional to the effluent flow rate, there is no reasonable potential of exceeding any applicable WQ criteria. Therefore, effluent temperature is monitored on "report only" basis on the Discharge Monitoring Reports (DMRs). Considering the reported temperature will be the one of the effluent, an exceedance of the above mentioned 30.5°C water quality criteria is not necessarily a permit violation. The 30.5°C value applies to the receiving stream, not the effluent. Therefore, if the effluent temperature exceeds 30.5°C, the permittee should note in the "comments" section of the DMR that this is the temperature of the effluent. A temperature check in the receiving stream below the discharge point may be performed in order to prove facility's compliance with the Tennessee Water Quality Standards and should also be noted in the "comments" section of the DMR.

Total Phosphorous

The facility's water treatment utilizes an agent which contains phosphoric acid as a component. Since phosphorous is one of the contributors to nutrient enrichment in the mixing zoned area, it will be monitored in the final outfall on a quarterly basis. This data will be utilized in TMDL or other nutrient reduction strategy development.

IX. ANTIDegradation

Tennessee's Antidegradation Statement is found in the Rules of the Tennessee Department of Environment and Conservation, Chapter 1200-4-3-.06. It is the purpose of Tennessee's standards to fully protect existing uses of all surface waters as established under the Act.

Stream determinations for this permit action are associated with the waterbody segment identified by the division as segment ID# **TN08010209002_1000**.

The division has made a water quality assessment of the receiving waters associated with the subject discharge(s) and has found the receiving stream to be neither an exceptional nor outstanding national resource water.

Additionally, this water does not support(s) designated uses due to Mercury, Polychlorinated biphenyls, Escherichia coli, Dioxin, chlordane, Phosphorus (Total), sedimentation/siltation, physical substrate habitat alterations from channelization, site clearance (land development), discharges from Municipal Separate Storm Sewer Systems (MS4), contaminated sediments, atmospheric deposition - toxics. This discharge from Outfall 001 is not expected to contain these effluent characteristics (consists only of noncontact cooling water/storm water runoff and does not represent an increase in flow) except phosphorus. The division, therefore, considers the potential for degradation to the receiving stream from the above listed parameters to be negligible except for the phosphorus (see explanation above regarding total phosphorus).

TMDLs have been developed and approved for this waterbody segment on the following parameters and dates:

Parameter
PCBs

TMDL Approval Date
10/15/2008

E. coli

07/27/2011

The proposed terms and conditions of this permit comply with the wasteload allocations of these TMDLs.

X. PERMIT DURATION

The proposed limitations meet the requirements of Section 301(b)(2)(A), (C), (D), (E), and (F) of the Clean Water Act as amended. It is the intent of the division to organize the future issuance and expiration of this particular permit such that other permits located in the same watershed and group within the State of Tennessee will be set for issuance and expiration at the same time. In order to meet the target reissuance date for the Loosahatchie watershed and following the directives for the Watershed Management Program initiated in January, 1996, the permit will be issued to expire in 2012.

APPENDIX 1

FACILITY DISCHARGES AND RECEIVING WATERS

FACILITY DISCHARGES AND RECEIVING WATERS

OUTFALL 001	
LONGITUDE	LATITUDE
35.284722	-89.963889

FLOW (MGD)	DISCHARGE SOURCE
0.115	Non contact cooling water
0.115	TOTAL DISCHARGE

RECEIVING STREAM DISCHARGE ROUTE			
Mile 1.9 of a wet weather conveyance to mile 11.7 of the Loosahatchie River			
STREAM LOW FLOW (CFS) *	7Q10	1Q10	30Q5
	50.0	1.7	1.7
(MGD)	32.3	1.1	1.1

STREAM USE CLASSIFICATIONS (WATER QUALITY)				
AQUATIC LIFE	RECREATION	IRRIGATION	LIVESTOCK & WILDLIFE	DOMESTIC SUPPLY
X	X	X	X	
INDUSTRIAL	NAVIGATION			

Treatment: Oil/water separator

* Reference: Flow Duration and Low Flows of Tennessee Streams through 1992 by George S. Law and Jess D. Weaver. Water Resources Investigations Report 95-4293 prepared by the U.S. Geological Survey in Cooperation with the Tennessee Department of Environment and Conservation and the Tennessee Valley Authority. Nashville, Tennessee, 1996.

Stormwater runoff is also discharged through Outfall 001 and is authorized under General permit TNR050988 for Storm Water Discharge Associated with Industrial Activity.

APPENDIX 2

PREVIOUS PERMIT LIMITS AND MONITORING REQUIREMENTS

Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : All Year

<u>Parameter</u>	<u>Qualifier</u>	<u>Value</u>	<u>Unit</u>	<u>Sample Type</u>	<u>Frequency</u>	<u>Statistical Base</u>
Flow	Report	-	Mgal/d	Recorder	Continuous	Daily Maximum
Flow	Report	-	Mgal/d	Recorder	Continuous	Monthly Average
Oil & Grease	<=	10	mg/L	Grab	Quarterly	Daily Maximum
Temperature, water deg. C	Report	-	deg C	Grab	Quarterly	Daily Maximum
pH	>=	6.0	SU	Grab	Quarterly	Minimum
pH	<=	9.0	SU	Grab	Quarterly	Maximum

<p>* ** ***</p>	<p>Flow shall be reported in Million Gallons per Day (MGD). pH analyses shall be performed within fifteen (15) minutes of sample collection. permit will contain language prohibiting visible floating scum, oil or other matter in the wastewater discharge.</p>
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APPENDIX 3

HISTORICAL MONITORING AND INSPECTION

TN0000965

Monitoring period	Flow MAvg	Flow DMax	O&G MAvg	pH	pH	Temperature
Permit limit	MGD	MGD	10	6.0	9.0	water deg. centigrade
09/30/2008			2.0	8.6	8.6	24.7
12/31/2008			2.1	7.4	7.4	24.7
03/31/2009			1.8	7.5	7.5	26.5
06/30/2009		0.12	2.1		8.4	26.5
09/30/2009		0.14	73.0		8.1	26.0
12/31/2009		0.14	3.1		6.7	26.4
03/31/2010	0.20	0.25	1.6	7.6	7.6	25.0
06/30/2010	0.20	0.24	2.3	7.8	7.8	26.5
09/30/2010	0.20	0.29	1.6	6.4	6.4	27.5
12/31/2010	10.00	10.00	0.1	8.2	8.2	25.0
03/31/2011	0.14	0.14	1.5	6.1	6.1	25.5
08/31/2011	0.11	0.11	1.5	7.8	7.8	26.8
11/30/2011	0.12	0.12	2.6	8.0	8.0	26.6
02/29/2012		0.12	3.5		8.2	26.6
05/31/2012	0.11	0.11	1.5	8.8	8.8	27.6
08/31/2012		0.12	3.0		8.0	26.8
	Flow MAvg	Flow DMax	O&G MAvg	pH	pH	Temperature
Permit limit	MGD	MGD	10	6.0	9.0	water deg. centigrade
Average	1.38	0.91	6.5	7.6	7.7	26.2
Minimum	0.11	0.11	0.1	6.1	6.1	24.7
Maximum	10.00	10.00	73.0	8.8	8.8	27.6
Exceedances	NA	NA	1	0	0	16
Count	8	13	16	11	16	16

APPENDIX 4

NEW PERMIT LIMITS

Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : All Year

<u>Parameter</u>	<u>Qualifier</u>	<u>Value</u>	<u>Unit</u>	<u>Sample Type</u>	<u>Frequency</u>	<u>Statistical Base</u>
Flow	Report	-	Mgal/d	Recorder	Continuous	Daily Maximum
Flow	Report	-	Mgal/d	Recorder	Continuous	Monthly Average
Oil & Grease	<=	10	mg/L	Grab	Quarterly	Daily Maximum
Phosphorus, total (as P)	Report	-	mg/L	Composite	Quarterly	Daily Maximum
Phosphorus, total (as P)	Report	-	lb/d	Composite	Quarterly	Daily Maximum
Temperature, water deg. C	Report	-	deg C	Grab	Quarterly	Daily Maximum
pH	>=	6.0	SU	Grab	Quarterly	Minimum
pH	<=	9.0	SU	Grab	Quarterly	Maximum

- * Flow shall be reported in Million Gallons per Day (MGD).
** pH analyses shall be performed within fifteen (15) minutes of sample collection.
*** permit will contain language prohibiting visible floating scum, oil or other matter in the wastewater discharge.